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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,670	03/18/2004	Jianbo Lu	81095822FGT1904	2669

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EXAMINER	
SY, MARIANO ONG	

ART UNIT	PAPER NUMBER
3683	

DATE MAILED: 04/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/708,670	LU ET AL.	
	Examiner	Art Unit	
	Mariano Sy	3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/18/04, 6/14/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-49 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the normal load" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the wheels" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim 14 recites the limitation "a wheel" in line 6. It is unclear if applicant is referring to “at least a first wheel” recited on lines 4-5 or a different wheel.

The subject matter in claims 15 and 16 are not consistent with the subject matter in claim 14 that these claims depend on, i.e. claim 14 recites “A system” and claims 15 and 16 recite “A method”.

Claim 25 recites the limitation "the vehicle wheels" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 34 recites the limitation "the normal load" in line 8. There is insufficient antecedent basis for this limitation in the claim.

Claim 34 recites the limitation "the rear wheels" in line 8. There is insufficient antecedent basis for this limitation in the claim.

Claim 41 recites the limitation "the vehicle wheels" in lines 7-8. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-10, 12-23, 25, 26, 30-33, 41-45, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wessman (US 6,612,394) in view of Nagai (US 5,016,910).

Re-claims 1, 2, 12-15, 17, 25, 41,and 47 Wessman disclosed, as shown in fig. 1-4, a system and method of controlling a vehicle having a plurality of brakes comprising: means to detect a parking mode 5, 3a, 3b, 4a, 4b; a controller 10 programmed to apply brake-steer to at least a first wheel to reduce a vehicle turning radius, see col. 2, lines 5-20.

However Wessman was silent to disclose means to determine vehicle loading condition and increasing normal load comprises controlling an active air suspension on at least one wheel.

Nagai teaches applying brake-steer and increasing normal load (determine by the pressure sensor 6) comprises controlling an active air suspension 4 on at least one wheel, see col. 1, line 55 through col. 2, line 37.

It would have been obvious to one of ordinary skill in the art to utilize the known brake-steer and increasing normal load comprises controlling an active air suspension on at least one wheel on the vehicle of Wessman, as taught by Nagai, in order to improve the driving stability of the vehicle.

Re-claims 3 and 16 Wessman disclosed, as shown in fig. 1-4, wherein the at least one wheel comprises a rear inside wheel relative to a turn.

Re-claims 4-6, 18-20, 30-32, and 42-44 Wessman disclosed, as shown in fig. 1-4, wherein means to detect a parking mode comprises a vehicle speed sensor 3a, 3b, 4a, 4b and a steering wheel angle sensor 5.

Re-claims 7, 21, 33, and 45 Wessman was silent to disclose detecting a parking mode in response to a driver-actuated switch.

Nagai teaches the use of a brake sensor 8 to sense a brake signal during a brake application.

It would have been obvious to one of ordinary skill in the art to utilize the known driver-actuated switch on the vehicle of Wessman, as taught by Nagai, in order to detect a brake application.

Re-claims 8-10, 22, 23, and 26 Wessman disclosed, as shown in fig. 1-4, wherein the step of applying brake-steer comprises applying a first brake and a second brake to reduce a vehicle turning radius.

7. Claims 34-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wessman (US 6,612,394) in view of Nagai (US 5,016,910) and in view of Schmitt et al. US 6,456,924) in view of Krueger et al. (US 6,481,806).

Re-claims 34-40 Wessman disclosed, as shown in fig. 1-4, a method of controlling a vehicle comprising: detecting a parking mode 5, 3a, 3b, 4a, 4b; in the parking mode in response to vehicle speed and steering wheel angle, applying at least one brake at a first wheel to reduce a vehicle turning radius, see col. 2, lines 5-20.

However Wessman was silent to disclose means to determine vehicle loading condition and increasing normal load on rear wheels comprises controlling an active air suspension on at least one wheel and detecting a parking mode in response to a driver-actuated switch.

Nagai teaches applying brake-steer and increasing normal load (determine by the pressure sensor 6) comprises controlling an active air suspension 4 on at least one wheel and the use of a brake sensor 8 to sense a brake signal during brake application, see col. 1, line 55 through col. 2, line 37.

It would have been obvious to one of ordinary skill in the art to utilize the known brake-steer and increasing normal load comprises controlling an active air suspension on at least one wheel and driver-actuated switch on the vehicle of Wessman, as taught by Nagai, in order to improve the driving stability of the vehicle.

Schmitt et al. teaches applying brake-steer comprises applying an increased drive torque to a second wheel relative to a first wheel.

It would have been obvious to one of ordinary skill in the art to have utilized the known teaching of applying brake-steer comprises applying an increased drive torque to a second wheel relative to a first wheel in the system of Wessman as modified, as taught by Schmitt et al., in order to improve vehicle's stability during turning.

Krueger et al. teaches wherein applying brake-steer comprises increasing the normal load on the rear wheels, see col. 1, lines 59-65 and col. 2, lines 48-49.

It would have been obvious to one of ordinary skill in the art to have utilized the known teaching of applying brake-steer comprises increasing the normal load on the

rear wheels in the system of Wessman as modified, as taught by Krueger et al., in order to improve vehicle's stability during turning.

8. Claims 11, 24, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wessman in view of Nagai as applied to claims 1, 14, and 25 above, and further in view of Schmitt et al. (US 6,456,924).

Re-claims 11, 24, and 27 Wessman as modified was silent to disclose and it is inherent that applying brake-steer comprises applying an increased drive torque to a second wheel relative to a first wheel during turning.

Schmitt et al. teaches applying brake-steer comprises applying an increased drive torque to a second wheel relative to a first wheel.

It would have been obvious to one of ordinary skill in the art to have utilized the known teaching of applying brake-steer comprises applying an increased drive torque to a second wheel relative to a first wheel in the system of Wessman as modified, as taught by Schmitt et al., in order to improve vehicle's stability during turning.

9. Claims 28, 46, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wessman in view of Nagai as applied to claims 25 and 41 above, and further in view of Krueger et al. (US 6,481,806).

Re-claims 28, 46, and 49 Wessman as modified was silent to disclose applying brake-steer comprises increasing the normal load on the rear wheels and means to

determine a loading condition comprises a yaw stability control system and a suspension height sensor to determine the loading condition.

Krueger et al. teaches wherein applying brake-steer comprises increasing the normal load on the rear wheels and means to determine a loading condition comprises a yaw stability control system and a suspension height sensor 13,15,17, 19 to determine the loading condition, see col. 1, lines 59-65 and col. 2, lines 48-49.

It would have been obvious to one of ordinary skill in the art to have utilized the known teaching of applying brake-steer comprises increasing the normal load on the rear wheels and means to determine a loading condition comprises a yaw stability control system in the system of Wessman as modified, as taught by Krueger et al., in order to improve vehicle's stability during turning.

10. Claims 29 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wessman in view of Nagai as applied to claims 25 and 41 above, and further in view of Nakamura et al. (US 5,408,411).

Re-claims 29 and 48 Wessman as modified was silent to disclose wherein means to determine a loading condition comprises a plurality of wheel speed sensors and a throttle sensor.

Nakamura et al. teaches means to determine a loading condition comprises a plurality of wheel speed sensors and a throttle sensor, see col. 35-62.

It would have been obvious to one of ordinary skill in the art to have utilized the known teaching of means to determine a loading condition comprises a plurality of

wheel speed sensors and a throttle sensor in the system of Wessman as modified, as taught by Nakamura et al., in order to improve vehicle's stability during turning.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Izumi et al. (US 4,691,284)

Kuraoka et al. (US 4,848,851)

Marumoto et al. (US 4,865,148)

Karnopp et al. (US 4,898,431)

Ito et al. (US 5,228,757)

Grabowski et al. (US 6,069,460

Lu et al. (US 6,631,317)

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariano Sy whose telephone number is 571-272-7126. The examiner can normally be reached on Mon.-Fri. from 9:00 A.M. to 3:00 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bucci, can be reached on 571-272-7099. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M. Sy

April 6, 2005

4/14/2005

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